



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/923,920	08/07/2001	David C. McDonald	DIS-P028	9013

27313 7590 09/28/2005

MARSH FISCHMANN & BREYFOGLE, LLP
3151 S. VAUGHN WAY
SUITE 411
AURORA, CO 80014

EXAMINER

NATNAEL, PAULO S M

ART UNIT	PAPER NUMBER
----------	--------------

2614

DATE MAILED: 09/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/923,920

Applicant(s)

MCDONALD, DAVID C.

Examiner

Paulos M. Natnael

Art Unit

2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7-17 and 20 is/are allowed.
- 6) ☒ Claim(s) 1-6, 21 is/are rejected.
- 7) ☒ Claim(s) 18 and 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

By

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pettit, U.S. 6,256,073.

Considering claim 1, Pettitt discloses all claimed subject matter, note;

a) a segmented color wheel having four segments...,is met by color wheel 400, fig.4;

b) the claimed three of the segments being primarily transmissive in only a portion of the wavelength spectrum of visible light, the portion for each of the three segments not being identical, is met by segments 402-408 which are not identical.

c) a fourth segment... is met by the white segment;

d) a base to which the color wheel is rotatably mounted, is inherent because the color wheel 400 is rotating color wheel and has to be mounted somewhere.

Except for;

Art Unit: 2614

e) a fourth segment...being broadly transmissive across the wavelength spectrum of visible light, the broadly-transmissive segment having a transmittance that is not uniform across the wavelength spectrum of visible light so as to provide a desired color of light transmitted therethrough.

Regarding e), Pettitt discloses a white segment as the fourth segment. It is well known that while the three filter/segments are designed to pass or transmit specific amount of light, the fourth segment (which is used for controlling brightness of the displayed color) is designed to pass all incident/visible light. In that regard, Pettitt discloses that "...a method of optimizing the fabrication of a color wheel is needed that will closely control the overall white efficiency variance of the completed color wheels without degrading the display system's color purity or substantially increasing the cost of the color wheel. The same need arises when matching color sources, whether light sources, color filters, or beam splitters, that exhibit unit-to-unit variances." on col. 6, lines 16-24. It would have been therefore obvious to the skilled in the art at the time the invention was made to implement the system of Pettitt because the reference implies that the overall white efficiency varies from unit to unit, and thus, is not uniform.

Considering claim 2, a color sequencing system as defined in claim 1, wherein the color sequencing system is optimized for use with a particular light source by selecting the transmittance of the broadly-transmissive segment so as to provide a substantially uniform light output after the light from the light source has passed through the broadly-transmissive segment.

See rejection of claim 1(c).

Considering claim **3**, a color sequencing system as defined in claim 2, wherein the spectral transmittance of the broadly-transmissive segment is substantially the inverse of the spectral light output from the light source, is inherent because when the light is non-uniform the sequencer tends to attenuate some of the light.

Considering claim **4**, a color sequencing system as defined in claim 1, wherein the spectral transmittance of the broadly-transmissive segment is attenuated in some portion of the wavelength spectrum of visible light;

See rejection of claim 1(c).

Considering claim **5**, a color sequencing system as defined in claim 1, wherein the spectral transmittance of the broadly-transmissive segment is notched in some portion of the wavelength spectrum of visible light.

See rejection of claim 1.

Considering claim **6**, a color sequencing system as defined in claim 1, wherein the three segments transmit light that is primarily red, green, and blue, respectively, is met by the four segments which transmit light that is red, green (shortwave and longwave) and blue. (see Table 1)

Art Unit: 2614

Regarding claim **21**, see rejection of claim 1;

Response to Arguments

3. Applicant's arguments with respect to claims 1-6 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

4. Claims **7-17** and **20** are allowable over the cited prior art.

5. Claims **18,19** remain objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paulos M. Natnael whose telephone number is (571) 272-7354. The examiner can normally be reached on 10:00am - 6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on (571)272-7353. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2614

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Paulos M. Natnael
Primary Examiner
Art Unit 2614

Pmn
September 26, 2005